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P E T I T I O N

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Commissioner for Patents
Alexandria, VA 22313

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Your Petitioners, DAVID W. MANNING, a citizen of the United States and a resident of the State of Texas, whose post office address is 9333 Memorial, #208, Houston, Texas 77024, and JOHN A. KLINE, a citizen of the United States and a resident of the State of Texas, whose post office address is 2220 Nantucket, Houston, Texas, 77057, pray that Letters Patent may be granted to them for the improvement in

A BATTERY-POWERED SEWER AND DRAIN CLEANER

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as set forth in the following specification.

BACKGROUND OF THE INVENTION

1. FIELD OF THE INVENTION

This invention relates to a sewer and drain cleaner and more particularly to a battery powered sewer and drain cleaner.

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2. DESCRIPTION OF THE RELATED ART

Sewer and drain cleaners are normally hand-driven or electrically driven. The professional grade sewer and drain cleaners are normally powered by an alternating current (AC) electric motor. The sewer and drain cleaners used by plumbers are normally used in wet conditions since the sewer and drain cleaners are not normally used unless there has been a sewer or drain backup or the like. Normally, a plumber will use an extension cord which extends from the AC electric motor on the cleaner to an electrical outlet. Frequently, the electrical extension cord comes into contact with water thereby posing an extremely dangerous electrical shock hazard. Many plumbers

1 are electrocuted annually when the electrically driven sewer and drain cleaners are
used in such wet conditions.

SUMMARY OF THE INVENTION

5 A battery-powered sewer and drain cleaner is disclosed which is essentially the same as a professional grade sewer and drain cleaner except that the motor on the cleaner of this invention is a DC electric motor and is driven by a battery associated therewith. The cleaner comprises a wheeled or wheelers frame having a rotatable drum mounted thereon which is driven by a battery-powered DC motor through either a belt or chain drive or a gear direct drive. A flexible plumber's snake is conventionally
10 associated with the rotatable drum. The fact that the sewer and drain cleaner of this invention is DC battery-powered eliminates the need for extension cords and eliminates the electrocution hazard normally associated with electrically driven sewer and drain cleaners.

15 It is therefore a principal object of the invention to provide a sewer and drain cleaner which is battery-powered.

Still another object of the invention is to provide a sewer and drain cleaner which
is powered by a DC motor operated by a battery.

20 Still another object of the invention is to provide a battery-powered sewer and drain cleaner which eliminates the need for extension cords.

25 Yet another object of the invention is to provide a battery-powered sewer and drain cleaner which eliminates the electrocution hazard normally associated with electrically operated sewer and drain cleaners.

These and other objects will be apparent to those skilled in the art.

1 **BRIEF DESCRIPTION OF THE DRAWINGS**

Figure 1 is a perspective view of one embodiment of this invention which is of the gear direct drive type; and

5 Figure 2 is a perspective view of another embodiment of this invention wherein the motor thereon is connected to the rotatable drum by a belt or chain drive.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to Figure 2, the sewer and drain cleaner of this invention is referred to generally by the reference numeral 10. Cleaner 10 includes a wheeled frame 12 which

10 is manipulated through the use of a handle 14. Although the frame of the cleaner is preferably of the wheeled type, the wheels thereof could be omitted. The cleaner 10 in

Figure 2 is conventional in design except for the motive force and the structure associated therewith. Cleaner 10 is of the belt or chain-driven type and includes a

15 rotatable drum 16 having a conventional plumber's snake 18 associated therewith.

Normally, the drum 16 and the snake 18 would be operated by an AC motor with the attendant electrocution hazard associated therewith. In the cleaner of Figure 2, the AC

20 motor has been replaced by a DC motor 20. Applicants have experimented with various motors and have found that 18-volt DC motors work satisfactorily. Preferably, the motor

25 20 is high speed and high torque. However, the main criteria is that the motor have sufficient torque and shaft speed to rotate the drum at 230-350 RPM. Motor 20 is driven by a rechargeable DC battery 22. The motor 20 is controlled by means of a control 24

which preferably includes a motor and voltage control associated therewith. Preferably,

1 the battery 22 is of the battery pack design which may be easily removed from the
cleaner for recharging purposes.

5 Figure 1 illustrates a modified form of the cleaner and which is referred to by the
reference numeral 10'. Cleaner 10' is identical to the cleaner 10 except that the DC
motor 20' is connected to the drum 16' by a gear or belt drive rather than a belt drive.
Cleaner 10' includes a battery 22' and control 24'. The cleaner 10' of Figure 1 operates
identically to cleaner 10 except that it is gear or direct drive rather than belt or chain-
driven.

10 The sewer and drain cleaner of this invention eliminates the need for extension
cords and eliminates the electrocution hazard normally associated with AC motor-driven
sewer and drain cleaners through the use of the DC motor and the battery employed in
the instant invention.

15 Thus it can be seen that the invention accomplishes at least all of its stated
objectives.

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